

I Claim:

1. A cutting tool comprising:

a body of sintered cemented carbide, cermet or ceramic; and

5 a hard and wear resistant coating applied on at least a functioning portion of a surface of the body, wherein said coating comprises a structure of one or more refractory layers of which at least one layer consists essentially of an equiaxed fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> with a thickness of 0.5-25  $\mu$ m and with a grain size of less than 0.5  $\mu$ m, and said fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> layer comprises at least one sublayer with a thickness between 0.02 and 3 10  $\mu$ m containing Al, Si and O with a Si concentration between 4-34 at%, Al concentration of 0-37 at% and O concentration of 60-67 at%.

15 2. The cutting tool according to claim 1, wherein the fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> is in contact with a TiC<sub>x</sub>N<sub>y</sub>O<sub>z</sub> layer.

3. The cutting tool according to claim 1, wherein the fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> is in contact with an  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> layer.

4. The cutting tool according to claim 1, wherein the fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> layer 20 has 1-200 sublayers containing Al, Si and O.

5. A method of coating a body with at least one fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> layer, the method comprising:

25 contacting the body with a reaction mixture comprising a hydrogen carrier gas, one or more halides of aluminium and a hydrolysing and/or oxidising agent at 800-1050 °C;

adding a sulphur agent to the reaction mixture to enhance the growth rate; and

depositing a  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> layer comprising at least one silicon enriched sublayer by periodically introducing a silicon halide.

6. The cutting tool according to claim 4, wherein the fine grained  $\kappa$ -Al<sub>2</sub>O<sub>3</sub> layer has less than 100 sublayers.

7. The method according to claim 5, wherein the one or more halide of  
5 aluminum is AlCl<sub>3</sub>.

8. The method according to claim 5, wherein the oxidising agent is CO<sub>2</sub>.

9. The method according to claim 5, wherein the sulphur agent is H<sub>2</sub>S.

10

10. The method according to claim 5, wherein the silicon halide is SiCl<sub>4</sub>.